Oklahoma City Air Logistics Center

TEAM TINKER

Strategic Materiel Recovery/Re-use Program

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Propulsion Environmental Working Group (PEWG)

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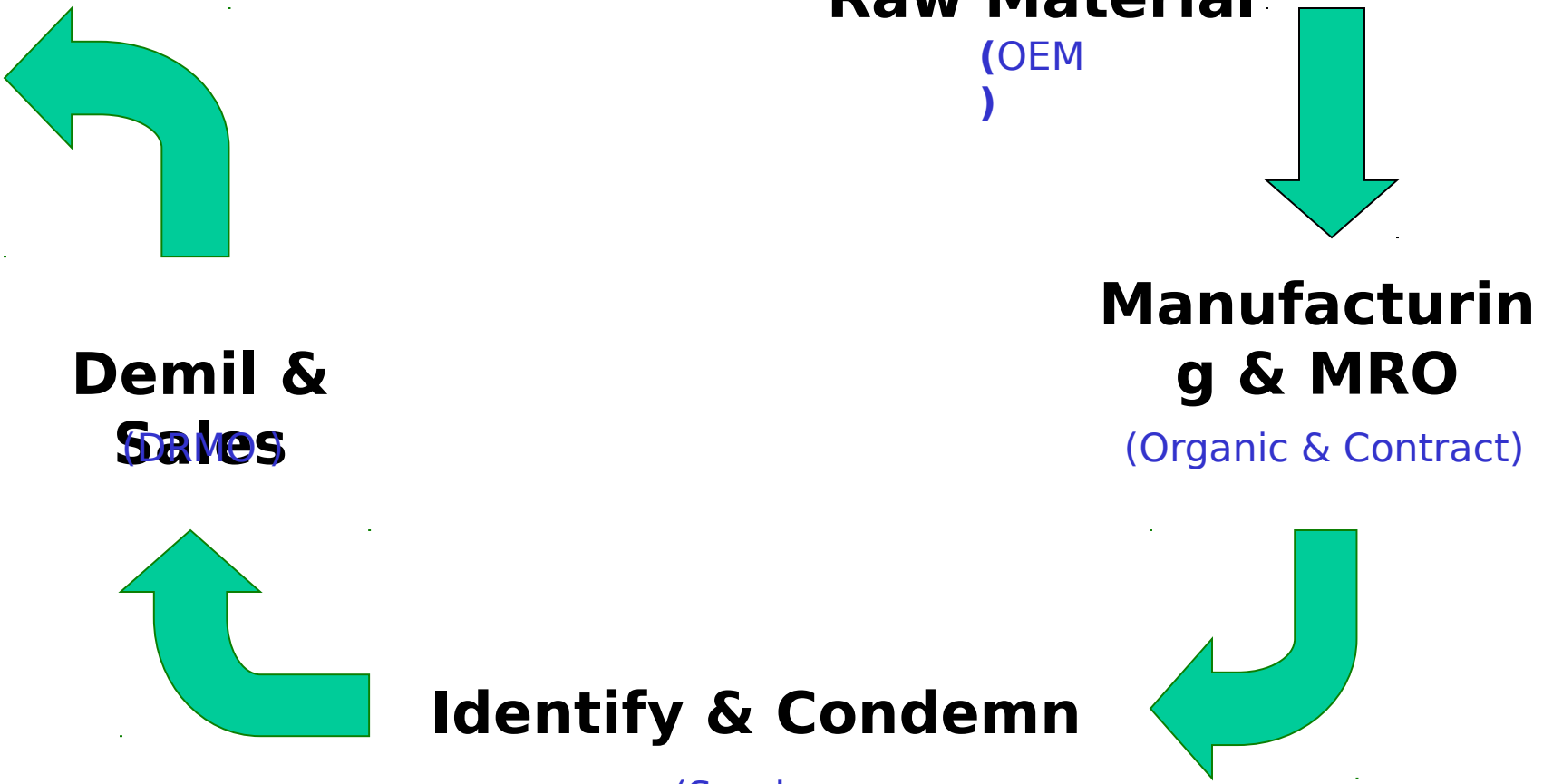
Current Environment

- **World titanium (Ti) shortage**
  - **DoD mission impacted by material shortages**
    - **Weapon system availability decreasing**
    - **Sustainment budgets destroyed**
  - **Cost and manufacturing lead-times increasing**
    - **Materiel production impacted by growing lead times**
    - **OEM restricted by sourcing capability**
  - **Closed loop manufacturing needed**
    - **Focus on highest value material (30%)**
    - **DoD source of "raw material"**

Collaborative effort between DoD, Processing Agent & OEMs

Current Process



Goals

- **Increase supply**
- **Decrease cost & lead times**
- **Protect technologies**
- **Decrease reliance on foreign markets**

Proposed Process

Virgin Raw Material (commercial markets)

Raw Material (OEM credit to Government contracts)

Manufacturing & MRO
(Organic & Contract)

Identify & Condemn
(Service Determination)

Collection at Sources
(DoD Depots)

Sorting by Value
(Contract Service)

Processing
(Government Owned Material)

Stakeholders

- **JSF Reclamation**
  - **Government: JSF JPO, ASC/577 AESG, AFRL/RX/RZ, HQ AFMC/A5/A7, JPCC, AF DoP**
  - **Industry: ELG Metals, P&W, PCC, Howmet**
- **Proof of Concept**
  - **Government: OC-ALC/CC, 327ASW/CC/YP, 72ABW/CC/SV, 309MXW/CC, 309CMXG/CL, AMARG, NAVAIR 4.0/4.4, FRS-East (Cherry Point), 76MXW/CC, DSCR/CC, SAF/IEE, DCMA**
  - **Industry: ELG Metals, AT Kearney, C&C Alloys, GDIT, GEA, P&W**

Paradigm Shift

De-militarization	De-manufacture
Re-cycle	Re-use
DRMO	Contractor Agent
	ITAR Part 122 Defense Trade Controls Certified
Scrap Metal	Strategic material
Auction	Closed loop Mfg
	Partnership
	Protects Environment
	Reduces energy costs

Focus of Efficiency

- **Re-cover all propulsion material**
  - **Tinker AFB & AMARG**
  - **Fleet Readiness Center - East**
- **Sort by alloy type**
  - **Engine OEMs need**

Inco 625	Rene 41	HS 25	**Ti-17**
Inco 718	Rene 77	HS 31	**Ti- 6-2-4-2**
Inco 901	Rene 80	HS 188	**Ti- 6-4**
Waspaloy	Rene 88	Hast-S	**Ti- 8-1-1**
PWA 509	Rene 95	Hast-X	L605
PWA 655	Rene 125	Waspaloy	C 1023
PWA 1447		X 40	
PWA 1480	Rene 142	X 750	
PWA 1484	Rene N4	A 286	
Mar M 509	Rene N5	AMS 5536	
	Rene N6		

Way Ahead

- **Tinker AFB proof-of-concept program underway**
  - **Initial focus on propulsion**
  - **Partnership with GEA & P&W**
  - **Working with Rolls Royce**
- **DoD wide expansion planned**
  - **90 day expansion to AMARG**
  - **NAVAIR components & whole engines**
  - **Contract repair**
  - **Aircraft systems and beyond**
- **DoD standardization long-term goal**

U.S. Air Force
Director of Propulsion